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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,029	07/21/2005	Emmanuel Legrand	047578/294906	9192
826	7590	01/08/2008	EXAMINER	
ALSTON & BIRD LLP			PAYER, HWEI SIU CHOU	
BANK OF AMERICA PLAZA			ART UNIT	
101 SOUTH TRYON STREET, SUITE 4000			PAPER NUMBER	
CHARLOTTE, NC 28280-4000			3724	
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			01/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s) CT	
	10/543,029		LEGRAND, EMMANUEL	
	Examiner		Art Unit	
	Hwei-Siu C. Payer		3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

The amendment filed on 10-24-2007 has been entered. Upon further consideration, the allowable subject matter of claims 3 and 15 as indicated in the last Office action has been withdrawn. Any inconvenience to the Applicant is regretted.

Claims Objection

Claims 3 and 10 are objected to because of the following informalities:

(1) In claim 3, the limitation of "in that the string passageway (112) is situated at a given distance (D) from the axis of rotation(C) of the head, and" is redundant since such limitation has already been included in claim 1 as amended.

(2) In claim 10, line 2, "string outlets" should read --exit regions-- (note line 3 of claim 1).

Appropriate correction is required.

Claims Rejection - 35 U.S.C. 102(b)

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1-4, 6-10, 13, 14, 16, 18, 19, 20, 21 and 22 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ballas et al. (U.S. Patent No. 4,054,992).

Ballas et al. discloses a cutting head (see Fig.5) comprising, among other things, a rectilinear passageway (79) for a cutter string (77), at least one curved portion (73) for supporting the string (77, see column 10, lines 40-43), wherein the passageway (79) extends along an axis (i.e. a horizontal axis, Fig.5, not labeled) that is spaced a distance from an axis of rotation (defined by the bolt 70 seen in Fig.5) and the curved portion (73) presents a radius of curvature that is greater than the distance as claimed.

3. Claims 1, 2, 4, 6-10 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ballas et al. (U.S. Patent No. 4,054,992).

Ballas et al. discloses a cutting head (see Fig.5) comprising, among other things, a rectilinear passageway (79) for a cutter string (77), a curved portion (76B) for supporting the string (77, see column 11, lines 1-5), a secondary curved portion (76A), wherein the passageway (79) extends along an axis (i.e. a horizontal axis, Fig.5, not labeled) that is spaced a distance from an axis of rotation (defined by the bolt 70 seen in Fig.5) as claimed.

Claims Rejection - 35 U.S.C. 103(a)

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballas et al. (U.S. Patent No. 4,054,992).

Ballas et al. shows the claimed invention except the radius of curvature of the curved portion (76B) does not appear to be variable.

However, as evidenced by applicant's claims 4, 5, 16 and 17, the radius of curvature of the curved portion can be either constant or variable, and it appears the claimed "variable" radius of curvature has no criticality. Therefore, to have the curved portion of Ballas et al. present a radius of curvature that is variable as desired would have been obvious to one skilled in the art.

3. Claims 11, 12, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballas et al. (U.S. Patent No. 4,054,992) in view of Morabit et al. (U.S. Patent No. 5,761,816).

Ballas et al. as set forth shows the claimed invention except the cross-section of the cutter string (77) is not polygonal.

However, cutter strings having a polygonal cross-section are well known in the art as evidenced by Morabit et al.

Therefore, it would have been obvious to one skilled in the art at the time this invention was made to select a well-known cross-sectional shape such as "polygonal" for the cutting string of Ballas et al.

Regarding claims 12 and 24, the claimed size of the cutter string is not patentably distinct over Ballas et al. as modified since the size of the cutter string

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depends more upon the size of its associated string receiving passage than on any inventive concept.

Remarks

Applicant's arguments with respect to claims 1, 2 and 4-13 have been considered but are moot in view of the new ground(s) of rejection.

Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hwei-Siu C. Payer whose telephone number is 571-272-4511. The examiner can normally be reached on Monday through Friday, 7:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for official communications and 571-273-4511 for proposed amendments.

H Payer
January 2, 2008

/Hwei-Siu C. Payer/

Primary Examiner, Art Unit 3724